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NEW LIZARDS FROM NORTHWESTERN PERU.

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The present paper is the tenth to appear dealing with the zoological results of the Harvard Peruvian Expedition of 1916.[1] This paper concludes the descriptions of new reptiles secured by the expedition, or at least, those reptiles recognized without doubt as new. No attempt has been made to give a complete list of the species found in the regions visited. Descriptions of the new reptiles have appeared as various groups were studied and compared with related forms from Ecuador and southern Peru. Although this has resulted in a very tardy appearance of some of the descriptions, the plan has proved satisfactory in most other respects. The region visited was almost unknown herpetologically. This has resulted in the discovery of a large number of new forms. The reptile fauna as a whole exhibits a mixture of affinities, but these cannot be adequately determined until the fauna of southern Ecuador is better known.

I am indebted to Dr. Thomas Barbour of the Museum of Comparative Zoölogy for the opportunity of making the collections reported upon in this paper, and for his kindness in permit-

[1]As these papers are rather scattered, they may be listed here as follows:

1. Bangs, Outram, and Noble, G. K. 1918. Description of a new woodpecker from Peru. Proc. New England Zoöl. Club, vol. 6, p. 85–86.
2. Bangs, Outram, and Noble, G. K. 1918. List of birds collected on the Harvard Peruvian Expedition of 1916. Auk, vol. 35, p. 442–463.
3. Barbour, T., and Noble, G. K. 1920. Some amphibians from northwestern Peru, with a revision of the genera Phyllobates and Telmatobius. Bull. Mus. Comp. Zoöl., vol. 63, p. 395–427, pl. 1–3.
4. Dunn, E. R. 1923. Some snakes from northwestern Peru. Proc. Biol. Soc. Washington, vol. 36, p. 185–188.
5. Noble, G. K. 1921. Some new lizards from northwestern Peru. Ann. N. Y. Acad. Sci., vol. 29, p. 133–139.
6. Noble, G. K. 1921. The bony structure and phyletic relations of Sphaerodactylus and allied lacertilian genera, with the description of a new genus. Amer. Mus. Novitates, no. 4.
7. Noble, G. K. 1921. Two new lizards from northwestern Peru. Ann. N. Y. Acad. Sci., vol. 29, p. 141–143.
8. Noble, G. K. 1921. A search for the Marsupial Frog. Natural History, vol. 21, p. 475–485.
9. Noble, G. K. 1921. Pages from the photographic journal of the Harvard Peruvian Expedition. Natural History, vol. 21, p. 486–493.

ting me the loan of this material while studying other South American collections in the American Museum of Natural History.

Dicrodon barbouri, new species.[1]

Diagnosis.—A medium-sized *Dicrodon* more Ameiva-like in scutation than the other species of the genus; five enlarged occipitals followed by a row of post-occipitals, median occipital nearly as large as the single fronto-parietal; scales of the back granular, of uniform size from occiput to base of tail; over twenty femoral pores.

Distribution.—Valley of Chira River, and possibly adjacent river valleys in the province of Piura, Peru.

Type.—Adult male No. 17,972, Museum of Comparative Zoölogy; edges of thickets near Chira River, Sullana, northwestern Peru. July 30, 1916. G. K. Noble.

Description of type.—Nostril on the posterior part of anterior nasals; anterior nasals narrowly in contact behind rostral; fronto-nasals exactly as wide as long, separated from the loreal by the postnasals and prefrontals which make a contact on each side as broad as the contact of the anterior nasals with each other; prefrontals broadly in contact, their suture less than half the length of either prefrontal; frontal in contact with the first and second supra-oculars, separated from the third and the posterior half of the second supra-ocular by a single row of small scales; four supra-oculars, the most posterior of the right side split obliquely to form an additional scale; first supra-ocular in contact with the loreal and also with the supraciliaries; the other three supra-oculars separated from the supraciliaries by two or three rows of small scales; six supraciliaries on a side; a single fronto-parietal; five occipitals, the median largest and in contact on either side with a pair of somewhat smaller occipitals; posterior to the occipitals a single row of postoccipitals about a third the diameter of the median occipital, this row followed by three or four other rows which grade into the granules of the neck; five enlarged upper labials to the middle of the eye; five lower labials to the same point; between lower labials and chin-shields a wedge of scales, the anterior very much smaller than the posterior and extending forward only part of the length of the first chin-shield. Chin and throat covered with small scales, a broad band of about six rows of larger scales extending transversely across the throat at the angle of the jaw; a collar of larger scales on the neck region, these scales largest in the mid-line and grading off both on the sides and anteriorly.

Dorsal scales granular, minute, sharply marked off from the large scales of the tail and the enlarged scales on the sides of the appendages; ventral scales in eight longitudinal rows and thirty-five transverse rows; a double row of small scales lateral to the enlarged ventral plates; pre-anal plates enlarged, forming an irregular triangle four scales high and four scales wide at the base, the scales of this triangle alternating with one another; femoral pores in twenty-one and twenty-two rows. Antebrachials in two rows of enlarged scales, continuous with the brachials which are in six rows, the pre-axial scales much the larger and grading into the postaxial ones; under sides of thighs covered with large scales, three rows at the distal end of the thigh and eight at the proximal end; the pre-axial scales much the larger; under side of lower leg covered with three rows of very large scales; first pre-axial toe slightly longer than the fifth; tail covered with a series of keeled quadrangular scales, the keels oblique, but forming for the most part continuous ridges the length of the tail; thirty-one scales around the tail at the fifteenth ring.

[1] Named for Doctor Thomas Barbour, Museum of Comparative Zoölogy, Cambridge, Massachusetts, well known for his contributions to Neotropica herpetology.

Ground color above and on the sides a pale yellowish brown, slightly bluer on the head and appendages; whole upper surface covered by a series of whitish spots, these forming sixteen longitudinal rows on the back and sides, a few of the spots on the sides of the neck fusing to form the beginnings of a stripe; ventral surface whitish, yellowish pink on the chin and appendages, the color tending to rosy on the tail and lower legs; indistinct spotting of a bluish tone at the bases of the abdominal scutes; granules of the throat slightly bluish.

Measurements.—Total length, 422 mm.; head and body, 106; arm, 41; leg, 84; head length, 26; head breadth, 16.

This was a common species and a considerable series of specimens was preserved.

Polychroides, new genus.

Diagnosis.—Body strongly compressed, covered with keeled, imbricating scales of moderate size; head with large swollen scales tending to be bluntly keeled; tympanum distinct; a gular fold present in both sexes but larger in the male, this fold fringed anteriorly with elongate scales; digits compressed, four enlarged scales at the base of the claw; ventral lamellae of digits with a series of small keels to each scale; third and fourth toes subequal; femoral pores present in both sexes; tail very long, slightly compressed at the base; teeth tricuspid, the premaxillary teeth only faintly so; no pterygoid teeth; no sternal fontanelle; abdominal ribs.

Tyye.—Polychroides peruvianus, new species.

Remarks.—The generic status of many of the slow-moving arboreal iguanids is very uncertain. The species described below cannot be referred to either Enyalius, Enyalioides or Polychrus as at present defined. It seems most closely related to Polychrus with which it agrees in its femoral pores, large head scales, subequal third and fourth toe and its sacculated lung. I have seen both Polychrus and Polychroides alive and have been struck by their great similarity in behavior. The pronounced nuchal crest of the latter readily distinguishes it from the former.

Polychroides peruvianus, new species.

Diagnosis.—A compressed, long-tailed Polychrus-like iguanid, having a pronounced nuchal crest and a dorsal crest in the male; a pronounced gular fold present, denticulated anteriorly with enlarged scales; a pronounced sexual dimorphism,—the males with the higher dorsal crest, enlarged femoral pores and with a whitish or yellowish head; the females without a dorsal crest, with ill-defined femoral pores and with a dark-brown or greenish head striped on the sides with white.

Distribution.—Wooded valleys of the Andes of northern Peru, extending through the province of Cajamarca and part of Piura; specimens taken near Bellavista and Querocotilla.

Type.—Adult male, No. 17,973, Museum of Comparative Zoölogy; valleys near Querocotilla, province of Cajamarca, Peru. September, 1916. G. K. Noble.

Description of type.—Head large, greatest width of head contained one and two-thirds times in the greatest length; canthus rostralis very pronounced, continued posteriorly into a supraciliary and temporal ridge, the scales of this ridge swollen but not forming a denticulation; nostril piercing a single scale, immediately ventral to the anterior end of the canthus rostralis; distance be-

tween anterior end of nostril and tip of snout equals the distance between posterior edge of nostril and anterior border of the orbit (not the eye, which is very much restricted by a dermal capsule as in chamaeleons); tympanum vertically oval, about the same diameter as the eye opening; head scales large, swollen and irregular, not distinctly keeled; a cluster of scales on the top of the snout, behind the nostrils and before the eyes largest; a series of six enlarged scales forming a supra-orbital semicircle; a series of three small scales in a mid-line on the occiput, in contact on either side with two very large scales which in turn are in contact laterally with three or four somewhat smaller scales; four upper and four lower labials to the mid-point of the eye; a pronounced gular pouch; gular scales much larger than the ventrals, ovate, keeled, not mucronate as the ventrals; scales on the posterior part of the gular pouch smaller than the adjacent gulars; a series of elongate, pointed scales fringing the anterior ventral edge of the pouch; a nuchal crest formed of five or six enlarged pointed scales, grading without a break into a series of dorsal-crest scales which are about one-half as long as the nuchals; the highest nuchal scale slightly longer than the greatest diameter of the tympanum; scales of the back and ventral surface of nearly uniform size; those of the abdomen, smallest, those near the mid-line of the back, largest; dorsal and ventral scales keeled, pointed, imbricating, continuous with smaller scales on the legs; tail covered with somewhat smaller scales, but the keels forming a continuous ridge along the length of the tail; fifteen of these ridges at a point about one-fourth the length of the tail. Limbs slender, rather long; adpressed hind leg reaches shoulder; femoral pores pronounced, eleven to a side.

Head straw-color, blotched with a slightly darker tone; in life, cream-color and yellow; body blue-gray blotched with brown and a light-green tone; in life, a bright green blotched with brown; no distinct pattern, but the darkest blotches tending to form four transverse bars; gular sac and throat cream-color; ventral surface of abdomen and appendages suffused with a brownish tone.

Measurements.—Total length, 511 mm.; head and body length, 128; fore leg from axilla, 62.5; hind leg from vent, 81; greatest width of head, 22.

Remarks.—This species is closely allied to *Enyalioides festae* Peracca from which it differs in its larger head-scales and gular sac, also in certain differences in the scutation of the digits and head. I would not hesitate to refer it to the genus Enyalioides were it not that this procedure would require a considerable modification of our present conceptions of that genus.

Phyllodactylus magister, new species.

Diagnosis.—A large Phyllodactylus very closely allied to *Phyllodactylus tuberculosus,* without tubercles on the reproduced tail; a series of sixteen longitudinal rows of enlarged keeled tubercles on the back; occiput covered with granules intermixed with tubercles; abdominal scales in thirty-one and sixty-two rows; differing from *Phyllodactylus tuberculosus* in its proportionately smaller tubercles of the back, its smaller post-mentals, and its wider scutes on the median ventral surface of the tail, also in the different arrangement of the distal lamellae on the ventral surfaces of the toes, and in the somewhat different coloration.

Distribution.—Arid valleys of the Chinchipe and Marañon from Perico on the north to Bellavista on the south, extending westward to Tamboa in the province of Cajamarca, Peru.

Type.—Adult male, No. 17,974, Museum of Comparative Zoölogy; deserted huts near Perico, valley of the Chinchipe. September, 1916. G. K. Noble.

Description of type.—Head much larger than broad; distance from the anterior angle of the eye to tip of snout a trifle longer than distance from posterior border of eye to posterior angle of ear; greatest diameter of eye contained in the distance between eye and tip of snout one and four-fifths times; ear opening narrow, oblique, approximately one-half the greatest diameter of the eye; digits slender, the distal dilation truncate, its greatest width contained about twice in the greatest diameter of the eye; slender part of the digit with a series of enlarged plates below, nine of these plates under the fourth toe, separated from the distal dilations by four rows of small scales, each row consisting of either two or three scales; snout covered with uniform granules or small tubercles; occiput with minute granules intermixed with tubercles which are smaller than the large tubercles of the back; no denticulation on the anterior edge of the ear opening; rostral twice as broad as high, rectangular but notched at two corners by the nostrils, partly cleft in the mid-line as in most members of the genus; two enlarged internasals in broad contact; nostril in contact with the first supralabial, the rostral, the internasal and two small scales; six supralabials and six infralabials to the middle of the eye; mental large, pentangular, in contact with two enlarged chin-shields which are surrounded with scales approximately one-third the size, these chin-shields grading rapidly into the small scales of the throat; back covered with small granules and sixteen longitudinal rows of trihedral keeled tubercles; a few tubercles lateral to the outer rows, tending to form an incomplete row on either side, just dorsal to the enlarged ventral scales; lower surfaces with smooth, imbricate scales in thirty-one longitudinal rows (counting the enlarged scales which encroach upon the sides of the body); sixty-two of these abdominal scales in a straight line between constriction of the neck and vent; tail (reproduced) cylindrical, tapering, covered with imbricate smooth scales, those of the ventral surface much larger than those above; a median series of transversely expanded scales below, these three to four times as broad as long.

Pale grayish brown above and below; a series of irregular dark blotches on the dorsal surface; no facial stripe; no bandings of a dark tone on the back; tail marked as the back with a series of poorly defined spots.

Measurements.—Total length, 122 mm.; head and body length, 58; fore leg from axilla, 18; hind leg from vent, 24; greatest width of the head, 12.

Remarks.—Three species of Phyllodactylus are found in the region traversed by the Harvard Peruvian Expedition of 1916. *Phyllodactylus inaequilus* Cope is confined to the sandy deserts of the coast. The expedition met with it at Paita and Eten where it was found only under boards, brush and other litter strewn about on the sand. The two other species differ radically from *Phyllodactylus inaequilus* in habits, for they were never found on the ground, but always in houses or in deserted shacks. *Phyllodactylus phacophorus* Tschudi seems to have a much wider range than *Phyllodactylus magister.* The former species was found in many scattered localities in the provinces of Piura and Cajamarca, namely: Huancabamba and Chongollapi as well as Bellavista and Perico. The latter species appears to be chiefly confined to the Chinchipe and Marañon valleys, although one specimen was taken at Tamboa. Although *Phyllodactylus phacophorus* and *Phyllodactylus magister* were taken in the same huts, it is probable that they do not compete with each other in securing food, for the latter species is usually very much larger

than the former. Our largest specimen of *Phyllodactylus magister* measures 68 mm. in head and body length, while none of our specimens of *Phyllodactylus phacophorus* reach over 45 mm. from snout to vent. Young specimens of both species are radically different in color; the latter with its conspicuous striping cannot be confused with the former.

Stenocercus nigromaculatus, new species.

Diagnosis.—Dorsal scales strongly spinose, slightly larger than ventrals, slightly smaller than caudals; fifth toe shorter than second; a dorsal denticulation. Brownish above with two pale dorso-lateral stripes and a series of dark cross-bars; males with a black Y-shaped mark on the lower chest and abdomen, also a black stripe on the ventral surface of the thighs and across the cloacal region.

Distribution.—Found only in the valley of the Huancabamba River and vicinity; taken at several points near the town of Huancabamba and at Chumaya.

Type.—Adult male, no. 17,975, Museum of Comparative Zoölogy; Huancabamba, province of Piura, Peru. August, 1916. G. K. Noble.

Description of type.—Anterior head shields swollen but not keeled; supra-oculars and occipital shields keeled; epidermal sense organs irregularly scattered over the head shields; nostrils superior; nasals separated from the rostral by a pair of scales; only one scale of the supra-orbital semicircles in broad contact with its mate of the opposite side, but another pair barely meeting; twelve scales in each supra-orbital semicircle; scales between supra-orbital semicircles and the small postnasals of more or less the same size; supra-oculars smaller than the shields on the snout, imbricating and forming about five longitudinal and nine transverse rows; no series of swollen scales separating the supra-oculars from the supraciliaries; six very much elongated and obliquely set supraciliaries; occiput covered with uniform scales of the same size or slightly smaller than those in the supra-orbital semicircles; no distinction between parietal and occipital scales; no pterygoid teeth; ear opening with one large and three small denticulate scales projecting posteriorly from its anterior margin; supra- and infralabials very narrow, the supralabials bordered above by another row of scales broader than themselves; infralabials bordered below by a series of scales about the same width as themselves; four and one-half upper and five lower labials to the middle of the eye; sides of the neck covered with scales of the same size as those on the dorsum; a pronounced fold immediately before the shoulder; a series of five or six enlarged chin-shields; scales of the throat of uniform size and slightly smaller than those on the abdomen; body slightly depressed; a vertebral denticulation formed by scales only slightly larger than those of the back; dorsal scales large, strongly imbricate, sharply keeled and ending in a short spine, the keels forming continuous lines which are somewhat oblique and directed toward the mid-line of the body; ventral scales smooth, pointed but not mucronate, slightly smaller than the dorsal scales; the adpressed hind limb reaches halfway between shoulder and ear; tail more than twice as long as head and body, slightly compressed; caudal scales a little larger than dorsals, keeled, mucronate and forming oblique ridges as in the case of the dorsals.

Ground-tone brownish to dull green; on each side of the back a pale stripe which becomes fawn-colored just behind the shoulders and fades out in the lumbar region; a series of ten transverse bars of dark brown across the back between these lateral stripes; the color between these dark blotches varies from fawn-color on the shoulders to greenish toward the tail; a conspicuous vertical

bar of black just before the shoulder and behind the neck-fold; lower surface yellowish or greenish, slightly iridescent; a black Y-shaped mark beginning just behind the shoulders and extending to the vent; black continued on to the ventral surfaces of the hind legs; an indistinct mottling of pale brown on the throat; a suffusion of pink on the under surfaces of the tail.

Measurements.—Total length, 231 mm.; head and body length, 74; fore leg from axilla, 28; hind leg from vent, 46; greatest width of head, 12.5.

Remarks.—Females differ from the males in having much more conspicuous dorso-lateral stripes. These are continued forward along the sides of the head. The black cross-bars on the back are only irregularly formed in the female; they usually consist of a series of spots. There is no conspicuous black pattern on the ventral surface of the female.

This species of Stenocercus which has very much the same form as Leiocephalus, differs from that genus not only structurally (absence of abdominal ribs), but also in habits. All the specimens secured frequented stone-walls or stone piles and were never seen among the ground litter or in open places as in the case of Leiocephalus.